

# isc Adjustable Voltage Regulator

# LM317K

## FEATURES

- Output Voltage Range :1.2V to 37V
- Output Current In Excess of 1.5A
- 0.1% Line and Load Regulation
- Floating Operation for High Voltage
- Complete Series of Protections:  
Current Limiting,  
Thermal Shutdown and SOA Control.
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## DESCRIPTION

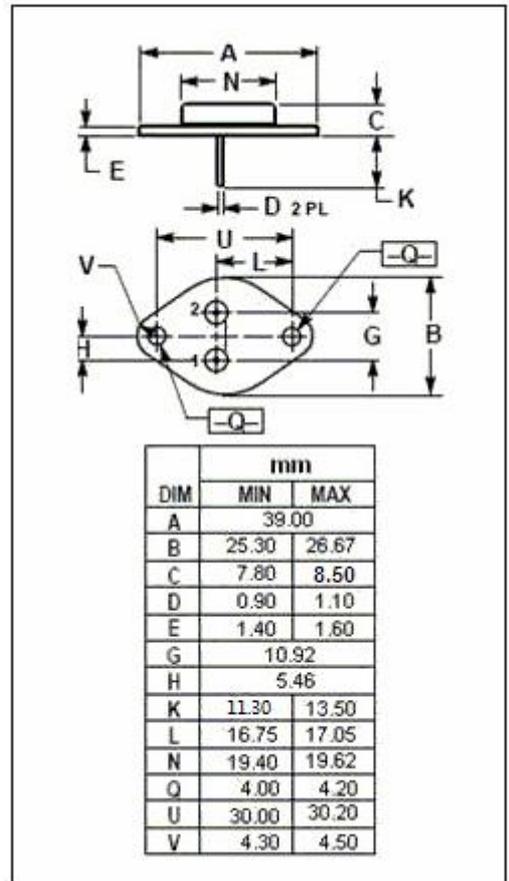
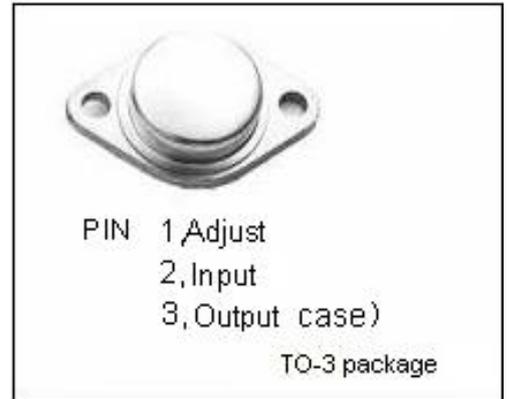
- For use as positive adjustable voltage regulators.
- Designed to supply more than 1.5A of load current with an output voltage adjustable over a 1.2 to 37V range.
- The nominal output voltage is selected by means of only a resistive divider , making the device exceptionally easy to use and eliminating the stocking of many fixed regulators.

## ABSOLUTE MAXIMUM RATING(T<sub>a</sub>=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>i</sub> -V <sub>o</sub>	Input-output Differential Voltage	40	V
I <sub>o</sub>	Output Current	1.5	A
P <sub>D</sub>	Power Dissipation	Internally Limited	W
T <sub>OP</sub>	Operating Junction Temperature	0~125	°C
T <sub>STG</sub>	Storage Temperature	-65~150	°C

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance, Junction to Case	4	°C/W
R <sub>th j-a</sub>	Thermal Resistance, Junction to Ambient	35	°C/W



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**• ELECTRICAL CHARACTERISTICS**

 ( $V_i - V_o = 5V$ ,  $I_o = 0.5A$ ,  $I_{MAX} = 1.5A$ ,  $P_{MAX} = 20W$ , unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{REF}$	Reference Voltage	$V_i - V_o = 5V$ ; $I_o = 40mA$ to $500mA$ ,	1.2	1.25	1.3	V
$\Delta V_o$	Line Regulation	$V_i - V_o = 3V$ to $40V$ ; $I_o = 500mA$			0.04	%/V
$\Delta V_o$	Load Regulation	$V_i - V_o = 5V$ ; $I_o = 10mA$ to $1.5A$			0.5	%
$I_{ADJ}$	Adjustment Pin Current	$V_i - V_o = 5V$ ; $I_o = 40mA$ to $500mA$			100	$\mu A$
$\Delta I_{ADJ}$	Adjustment Pin Current	$V_i - V_o = 3V$ to $40V$ ; $I_o = 40mA$ to $500mA$			5	$\mu A$
$\Delta I_{ADJ}$	Adjustment Pin Current	$V_i - V_o = 5V$ ; $I_o = 10mA$ to $1.5A$			5	$\mu A$
$S_{VR}$	Ripple Rejection	$V_o = 10V$ ; $I_o = 500mA$ ; $V_i - V_o = 5V$ ; $f = 100Hz$ , $C_{ADJ} = 10 \mu F$	66			dB

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